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10/698,792

10/31/2003

Jingdan Zhang

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1744

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01/25/2005

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EXAMINER

SAJOUS, WESNER

ART UNIT

PAPER NUMBER

2676

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/698,792

Applicant(s)

ZHANG ET AL

Examiner

Sajous Wesner

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 16-20 and 26-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-15, 21-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Tong et al. (US2004/000196120).

Considering claim 1, Tong discloses a computer implemented method for rendering a synthesized image (see fig. 2) comprises accessing (210, fig. 2) a first texton mask indicative of feature elements in a sample texture (200, fig. 2, wherein the first texton mask corresponds to texton vocabulary derived from texture sample, as described in paragraphs 68 and 81); creating (items 210 and/or 240, fig. 2) a second texton mask (items 220 or 260) having progressively-variant features (wherein the progressively-variant features corresponds to the colors, geometric, shape and

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photometric properties of the texton, see paragraph 55) based on a user selected transition function applied to the first texton mask (wherein the progressively-variant features based on a user selected transition function is equivalently performed when the user-specified direction for a vector field is determined to allowing the user to decorate the real-world geometry with real-world textures, as characterized by the abstract of disclosure in light of paragraph 99); and creating (270-290, fig. 2) a synthesized texture image guided by the first texton mask, the second texton mask and the sample texture (see paragraphs 57, 270 and 273).

Re claims 2 and 3, Tong discloses texton mask with binary representative values indicating a plurality of colors (see paragraph 71, wherein the values at the vertex are corresponds with vertex colors, as characterized by paragraph 97).

As per claims 4-6, Tong discloses the second texton mask (v, fig. 3) with a transition function including mesh or field warping using radial basis functions (as depicted by fig. 3c and characterized by paragraphs 62-71).

Re claim 7, Tong discloses creating (270-290) the synthesized texture includes identifying a portion of the synthesized texture synthesize and identifying a corresponding portion of the second texton mask for the portion to be synthesized. (Note that since Tong create synthesized texture using the first and second textons, as characterized by fig. 2 and implied in paragraphs 57, 270 and 273, it is imperative that the portion of the first and the second textons be identified so that the synthesis result will reflect the two textons). See paragraph 102.

As per claim 8, Tong discloses creating (270-290) creating the synthesized

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texture include': identifying a portion of the first texton mask similar to the portion of the second texton mask and identifying a corresponding portion of the sample texture corresponding to the portion of the first texton mask. (It is noted that since Tong create synthesized texture using the first and second textons and the sample texture, as characterized by fig. 2 and implied in paragraphs 57, 270 and 273), it is inherent and imperative that all the portion of the first and the second textons and the sample texture be identified and compared with each other so that the synthesis result will reflect the two textons and the sample texture). See paragraph 102.

As per claim 9, Tong discloses creating the synthesized texture includes assigning pixel characteristics of the portion of the synthesized texture according to the portion of the sample texture. See paragraphs 118, 123, and 129.

Regarding claim 10, Tong discloses accessing (210, fig. 2) a first texton mask and a second texton mask (220, wherein the first texton mask corresponds to texton vocabulary derived from texture sample, as described in paragraphs 68 and 81), each texton mask [inherently] being indicative of feature elements in respective first and second sample textures (it is noted that since the bidirectional texture function from which the textons are derived can describe textures or texture patches (see paragraphs 54 and 56), it is inherent that the textons each would indicate features elements that are respective of a first and a second sample textures, respectively); creating (240, fig. 2) a third-texton-mask (260) being based on a combination of the first texton mask and the second texton mask; and creating (270-290, fig. 2) a synthesized texture image guided

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by the first texton mask, the second texton mask, the first sample texture and the second sample texture (see paragraphs 57, 270 and 273).

Re claim 11, Tong inherently discloses creating the third texton (260) mask by interpolating between the first texton mask and the second texton mask. (note that since texton mask 260 is derived from both the vocabulary via texton analysis 210 and texton map 220, it is inherent to interpolate between texton one and two to derived to texton 260, otherwise, texton 220 and the vocabulary texton would not have had complimented for texton 260.

As per claim 12, Tong discloses interpolating between the first texton mask and the second texton mask comprises interpolating two dimensional functions of the first texton mask and the second texton mask in three dimensions and obtaining a two dimensional portion (as implied in paragraph 59).

As per claims 13 and 14, Tong discloses smoothing the third texton mask after interpolating using a Gaussian function (as implied in paragraph 82, via the Gaussian texton filtering process).

As per claim 15, Tong discloses setting values of the third texton mask as a function of a threshold (as characterized by paragraph 80).

Regarding claim 21, Tong, at fig. 2, discloses a method for rendering (270-290) synthesized texture on an image of a three-dimensional object (230), comprises accessing (210, fig. 2) a two-dimensional progressively-variant sample texture (200), a texton mask (220) for the sample texture and a representation of the three-dimensional object (230) comprising mesh of a plurality of vertices (see fig. 3, and paragraphs 55-

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57; and creating (270-290) a synthesized texture on the object guided by the two-dimensional progressively-variant sample texture, the texton mask for the sample texture and the mesh of a plurality of vertices (see paragraphs 57, 270 and 273).

As per claim 22, Tong discloses creating the synthesized texture comprises synthesizing a texton mask on the mesh along with a target texture (as implied in paragraph 106 at the top section of page 10).

Re claim 23, Tong discloses synthesizing a texton mask on the mesh along with a target texture comprises accessing determining a texton mask value and determining a color value at each vertex. See paragraph 71, wherein the values at the vertex are corresponds with vertex colors, as characterized by paragraph 97.

As per claim 24, Tong discloses determining a texton mask value and determining a color value includes candidate pool of pixels to select from. See paragraphs 65, 72, 101 and 118.

Re claim 25, Tong discloses determining the texton mask value includes forming a first neighborhood of mask values of vertices about each vertex and a second neighborhood of mask values about each pixel in the candidate pool of pixels (as implied in paragraphs 101-119).

***Allowable Subject Matter***

3. Claims 16-20, and 26-29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, because the prior art of record

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fail to teach creating the synthesized texture comprises creating a first modified texture guided by the first texton mask, the third texton mask and the first sample texture; creating a second modified texture guided by the second texton mask, the third texton mask and the second sample texture; and combining the first modified texture and the second modified texture (as recited in claim 16); determining the texton mask value at each vertex by selecting the mask value for the candidate pixel having the smallest distance between the first neighborhood of mask values of the vertex and the second neighborhood of mask values about each pixel the candidate pool of pixels.

### **Conclusion**

4. The prior art of record considered pertinent to Applicant's disclosure that are not relied upon are as recited in the PTO-892 form.

**Any response to this action should be mailed to:**

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Hand-held delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA , 6th floor (receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesner Sajous whose telephone number is (703) 308-5857. The examiner can also be reached on Mondays thru Thursdays and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Matthew Bella, can be reached at (703) 308-6829. The fax phone number for this group is (703) 308-6606.

WS



January 22, 2005



MATTHEW C. BELLA  
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